962-L1-195   **Anthony D Berard, Jr.*** (`adberard@kings.edu`), King's College, Department of Mathematics, Wilkes-Barre, PA 18711. *Monte Carlo Area Simulations.*

We have designed a collection of Monte Carlo simulations using MathKit which graphically and analytically illustrate the relationship between probability and area. In the first simulation we graph a unit square with vertices (0,0), (1,0), (1,1), and (0,1) along with a sub square with vertices vertices (0,0), (1/2,0), (1/2,1/2), and (0,1/2). The simulation then randomly chooses and plots points in the unit square, continuously counts the number which fall in the smaller square, divides by the running total number of points currently plotted, and displays the result. Thus we continuously compute the empirical probability of landing in the smaller square. Of course the probability should be and it is easy for students to hypothesize this and so they are not surprised when the result is close to .25. The second simulation approximates pi in a similar fashion and the third simulation approximates definite integrals in a similar fashion. All three simulations will be run and observations about the demo will be made. (Received August 25, 2000)